(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 19 May 2005 (19.05.2005)

(10) International Publication Number WO 2005/044765 A3

- (51) International Patent Classification: C07C 17/389 (2006.01) C07C 19/08 (2006.01)
- (21) International Application Number:

PCT/JP2004/0 16690

(22) International Filing Date:

4 November 2004 (04.1 1.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10 November 2003 (10.11.2003) JP 2003-379784 60/524,888 26 November 2003 (26.1 1.2003) US 24 December 2003 (24.12.2003) JP 2003-428054 5 January 2004 (05.01.2004) US 60/534,1 14

- (71) Applicant (for all designated States except US): SHOWA DENKO K.K. [JP/JP]; 13-9, Shibadaimon 1-chome, Minato-ku, Tokyo 105-8518 (JP).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): OHNO, Hiromoto [JP/JP]; c/o Production & Technology Control Department, Gases & Chemicals Division, SHOWA DENKO K.K., 5-1, Ogimachi, Kawasaki-ku, Kawasaki-shi, Kanagawa 210-0867 (JP).
- (74) Agents: AOKI, Atsushi et al; A. Aoki, Ishida & Associates, Toranomon 37 Mori Bldg., 5-1, Toranomon 3-chome, Minato-ku, Tokyo 105-8423 (JP).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 2 March 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PURIFICATION METHOD OF, 1, 1-DIFLUOROETHANE

(57) Abstract: Crude 1,1-difluoroethane containing at least one compound selected from the group consisting of unsaturated compounds each having two carbon atoms within the molecule and saturated chlorine-containing compounds each having two carbon atoms within the molecule is brought into contact with a zeolite and/or a carbonaceous adsorbent, or crude 1,1-difluoroethane containing hydrogen fluoride and, as impurities, at least one compound selected from the group consisting of unsaturated compounds each having two carbon atoms within the molecule is brought into contact with a fluorination catalyst in a gas phase state. High-purity 1,1-difluoroethane usable as a cryogenic refrigerant, or as an etching gas, can be produced in an industrially advantageous manner.



